USSR

BARAKOV, Yu. P., Nauchno-Tekhnicheskaya Informatsiya: Seriya 1 - Organizatsiya i Metodika Informatsionnoy Raboty; July, 1972; pp 3-12

On the basis of studies of constant informational requirements their parameters are established as a) the current information load of the consumer; b) the characteristics, by subject, of the informational requirements providing for the objective definition of interests and the weights (importance) of the classifications of the system, which, in combination, constitute the profile of interests of the consumer; c) that characteristic of a constant informational requirement determining the degree of preference by the consumer for scientific and technical information.

A technique is developed admitting of an objective determination of the quantitative and qualitative characteristics of a secondary document designed to provide optimal current information, taking into account the curtailment of primary sources depending on the optimal information load of the consumer and the weights (importance) of the classification included in the profile of interests.

2/2

Acc. Nr. AP0053743 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0080

B

112403b **Kinetics of the extraction of a complex catalyst from polyethylene dispersions by water.** Balabudkin, M. A.; Baram, A. A. (Leningrad. Tekhnol. Inst. Tsellyul.-Bum. Prom., Leningrad, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 176-7 (Russ). A simplified empirical equation was derived to describe the extn. kinetics of a complex catalyst from powd. polyethylene. Thus, $\eta = \eta_m[1 - \exp[-(a + b\tau)\tau/1 + \tau]]$, where η is the degree of extn. at time τ, η_m is the max. degree of extn., and a and b are exptl. consts. CKJR

YI

REEL/FRAME
19830804

7CB

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--KINETICS OF NIOBIUM PENTOXIDE DISSOLUTION IN A MIXTURE OF HYDROFLUORIC AND SULFURIC ACIDS -U-

AUTHOR--BARAM, I.I.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 75-81

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACTIVATION ENERGY, CHEMICAL REACTION KINETICS, HYDROFLUORIC ACID, SULFURIC ACID, THERMAL EFFECT, NIOBIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0627 STEP NO--UR/0149/70/013/001/0075/0081

CIRC ACCESSION NO--AT0137712

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0137712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF CHEM. DISSOLN. OF A MONODISPERSE MATERIAL IS DESCRIBED BY THE EQUATION: (SHOWN ON MICROFICHE), WHERE MO SUBO IS INITIAL WT. OF SAMPLE; M IS WT. OF SAMPLE AT TIME TAU, AND, S SUBO IS THE INITIAL REACTION SURFACE AREA. FOUR EQUATIONS ARE PROPOSED FOR CALCG. THE KINETICS OF THE CHEM DISSOLN. OF POWDER FROM THE WT. OF UNDISSOLVED SOLIDS. THE DISSOLN. ACTIVATION ENERGY FOR N SUB2 BO SUB5 IN A MIXT. OF HF PLUS H SUB2 SO SUB4 EQUALS 11.07 KCAL-MOLE. THE DISSOLN. RATE CONST. FOR VARIOUS TAU, TEMP., AND ROTATION RATES ARE CALCD. FOR NB SUB2 O SUB5 IN MIXT. OF XN HF PLUS 8N H SUB2 SO SUB4. FACILITY: UST-KAMENOGORSK. STROIT.-DOROZH. INST., UST-KAMENOGORSK, USSR.

UNCLASSIFIED

USSR

UDC 547.853.1'221:542.944.3:543.422

SHKURKO, O. P., BARAM, S. G., MAMAYEV, V. P., Institute of Organic Chemistry of the Siberian Department of the USSR Academy of Sciences, Novosibirsk

"Pyrimidines. XXI. Synthesis of 4(6)-substituted 2Ofluoropyrimidines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1281-1284

Abstract: The synthesis of 2-fluoropyrimidine (I) and its 4(6)-substituted derivatives (II-X) is described, and a study is made of their reactivity and the effect of the nature of the substituents on the mobility of the fluorine atom in nucleophilic substitution. The 4(6)-substituted derivatives are obtained by the action of cesium fluoride on the corresponding 2-chloropyrimidines in aprotonic bipolar solvents. Spectral and nuclear magnetic resonance data are presented which confirm the picture of the fluoropyrimidines obtained. The experimental procedures and yields are given for the reaction of chloropyrimidines with cesium fluoride and the separation of 2-fluoropyrimidine, 2,4-difluoropyrimidine, 2-fluoro-4-methylpyrimidine, 2-fluoro-4,6-dimethylpyrimidine and 2-fluoro-4-methoxipyrimidine and the isolation of 2-fluoro-4--phenylpyrimidine,2-fluoro-4-methyl-6-phenylpyrimidine,2-fluoro-4,6-diphenylpyrimidine, 2-fluoro-4-dimethylaminopyrimidine and 2,4,6-trifluoropyrimidine.

1/1

Acc. Nr: AP0052438 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 41 0460

B

101706b **Effect of the extent of orientation on the kinetics of the mechanical degradation of polymers.** Komissarov, S. A.; Aleksandrov, V. I.; Baramboim, N. K. (Vses. Zaoch. Inst. Tekst. Legk. Prom., Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 112-14 (Russ). The method of least squares was used to derive an equation describing the mech. degradation of Kapron, Lavsan, and Nitron fibers taking into account the structural ordering coeffs. An equation relating the elongation multiplicity factor, the mol. wt., and the dispersion time for highly oriented systems was also derived. The equation $M_\tau = (M_0 - M_\infty)e^{-(1.882 - 0.058\delta)\tau} - 182\,\delta + 6750$, where M_τ = mol. wt. at any time τ, M_0 = initial mol. wt., M_∞ = limiting mol. wt., and τ = the elongation multiplicity factor, satisfactorily described the mech. degradation of Nitron fibers. DBJR

1/1

REEL/FRAME 19821072

7

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DURABILITY OF THE ADHESIVE BONDS OF SHOE MATERIALS DURING REPEATED COMPRESSION -U-

AUTHOR-(03)-NURIYEV, M.A., GVOZDEV, YU.M., BARAMBOYM, N.K.

COUNTRY OF INFO--USSR

SOURCE--KOZH. OBUV. PROM. 1970, 12(3), 42-4

DATE PUBLISHED--------70

B

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--ELASTOMER, RUBBER ADHESIVE, ELASTIC MODULUS, FATIGUE STRENGTH, FOOTGEAR, BONDING PROPERTY/(U)SKB ELASTOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0881 STEP NO--UR/0498/70/012/003/0042/0044

CIRC ACCESSION NO--AP0124544

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS ELASTOMER SOLES (BRAND B), BONDED WITH NAIRIT NT-101 KRESIN BLEND AND NONPOROUS ELASTOMER SKB (CONTG. VARIABLE AMTS. OF CHANNEL BLACK), WERE SUBJECTED TO REPEATED COMPRESSIONS ON A SPECIALLY DESIGNED APP. THE FATIGUE STRENGTH OF THE ADHESIVE BOND WAS PROPORTIONAL TO THE ELASTIC MODULUS AND DEPENDED ON THE PHYSICOMECH. PROPERTIES OF THE BONDED MATERIALS.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DETERMINATION OF THE SEDIMENTATION STABILITY OF DISPERSE SYSTEMS -U-

AUTHOR-(02)-ROMANOVA, Z.T., BARAMBOYM, N.K.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 461-464

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--POLYVINYL CHLORIDE, CHEMICAL STABILITY, AQUEOUS SOLUTION, CHEMISTRY LABORATORY APPARATUS, OPTIC PROPERTY, TEST METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2163 STEP NO--UR/0069/70/032/003/0461/0464

CIRC ACCESSION NO--AP0125746

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125746

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AUTOMATIC DEVICE FOR DETERMINATION OF THE STABILITY OF DISPERSE SYSTEMS HAS BEEN DESIGNED. THE DEVICE IS BASED ON CONTINUOUS MEASUREMENT OF THE OPTICAL DENSITY OF A DISPERSION COLUMN. AN ESTIMATE IS GIVEN OF THE STABILITY OF AQUEOUS POLYVINYL CHLORIDE DISPERSIONS AND THEIR MIXTURES. FACILITY: MOSKOVSKIY TEKHNOLOGICHESKIY INSTITUT LEGKOY PROMYSHLENNOSTI.

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132220

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM A LIGHT SOURCE, THE LIGHT IS DIRECTED THROUGH THE SOLN. IWTHIN A CELL AND THEN ONTO A PHOTOCELL. THE SCATTERED AND TRANSMITTED LIGHT ARE REGISTERED BY 2 POTENTIOMETERS. THE HEAT TRANSFER MEDIUM FROM A THERMOSTAT IS DIRECTED TO THE THERMOSTATING JACKET OF THE CELL AND TO A CAPILLARY COOLLER THROUGH WHICH THE TITRANT IS ADDED AUTOMATICALLY. THE RATE OF THE TITRANT ADDN. CAN BE VARIED. A MOTOR DRIVEN STIRRER AGITATES THE SOLN. AT 60 RPM. THE APP. ENABLES AUTOMATIC TURBIDIMETRIC AND NEPHELOMETRIC TITRN. COMBINED WITH RECORDING OF THE TURBIDITY AND LIGHT SCATTERING. IT FURTHER ENABLES DETN. OF THE STABILITY OF THE SYSTEM, FORMATION OF NEW PHASES, AND DISTRIBUTION OF POLYMERS. FACILITY: MOSK. TEKHNOL. INST. LEGK. PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--REACTION OF BUTADIENE NITRILE RUBBERS WITH PHENOLFORMALDEHYDE RESINS IN THE PRESENCE OF HEXAMETHYLENETETRAMINE -U-

AUTHOR-(04)-DINZBURG, B.N., CHECHIK, L.E., KOMISSAROV, S.A., BARAMBOYM, N.K.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 10-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BUTADIENE, NITRILE RUBBER, PHENOL FORMALDEHYDE RESIN, HEXAMETHYLENETETRAMINE, IR SPECTRUM, COPOLYMER, VULCANIZATE, PLASTIC FABRICATION, MOLECULAR STRUCTURE, SPECTROMETER/(U)SKN40 NITRILE RUBBER, (U)NOVOLAK PHENOLIC RESIN, (U)UR10 SPECTROMOTER, (U)UKC14 SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0461 STEP NO--UR/0138/70/029/002/0010/0012

CIRC ACCESSION NO--AP0119397

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119397

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SKN-40 RUBBER (I) WITH A PHENOL CH SUB2 O NOVOLAK RESIN 18 (II), HEXAMETHYLENETETRAMINE (III), AND S WAS STUDIED BY IR SPECTROSCOPY. MODEL I-II-III MIXTS. WERE MILLED AT 30-400EGREES AND MOLDED AT 155DEGREES FOR 20 HR, AND THE PRODUCTS WERE EXAMD. IN UR-10 AND UKC-14 SPECTROMETERS OVER A WIDE RANGE OF FREQUENCIES. I AND II REACTED DURING MILLING TO GIVE B-II COPOLYMERS (THE AMT. OF COPOLYMERS FORMED DEPENDS ON THE I-II RATIO AND PROCESSING CONDITIONS). MOLDING AND HEAT TREATMENT OF I COMPNS. WAS ACCOMPANIED BY HARDENING OF II WITH III, A REACTION BETWEEN I, II, AND III, AS WELL AS A REACTION BETWEEN S, I, AND II. THE REACTION LED TO THE FORMATION OF SUPRAMOL. STRUCTURES WHICH IMPROVED THE PHYSICOMECH. PROPERTIES OF THE VULCANIZATES. FACILITY: VSES. NAUCH.-ISSLED. INST. PLENOCHNYKH MATER. ISKUSSTV. KOZHI, MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--THE EMPLOYMENT OF SCANNING OF THE LIVER FOR THE EVALUATION OF THE EFFECTIVENESS OF TREATMENT OF CHRONIC HEPATITIS AND LIVER CIRRHOSIS -U-

AUTHOR-(03)-BARAMIDZE, T.G., SAMADASHVILI, A.G., ROSTOMOVA, L.T.

B

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 49-54

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC STAIN, DIAGNOSTIC DRUG, HEPATITIS, CIRRHOSIS, LIVER FUNCTION, IODINE ISOTOPE, GOLD ISOTOPE, CHEMICAL LABELLING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1020 STEP NO--UR/0241/70/015/006/0049/0054

CIRC ACCESSION NO--AP0130055

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0130055
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 32 PATIENTS WERE EXAMINED. SCANNING OF THE LIVER WAS PERFORMED WITH THE AID OF BENGAL ROSE LABELLED WITH I PRIME131 AND COLLOIDAL AU PRIME198. THE RESULTS DERIVED WERE COMPARED WITH DATA OF CLINICAL OBSERVATION AND FUNCTIONAL LIVER TESTS. REPEATED SCANNING OF THE LIVER REFLECTS THE DYNAMICS OF THE DISEASE AND MAY BE EMPLOYED AS AN OBJECTIVE CRITERION OF THE EFFECTIVENESS OF TREATMENT. FACILITY: NAUCHNO-ISSLED. INSTITUT ONKOLOGII I TERAPII MZ GRUZSSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RADIOMETRIC STUDY OF ION SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM AQUEOUS ORGANIC MEDIA -U-

AUTHOR-(04)-VDOVENKO, L.I., BARAN, A.A., GLAZMAN, YU.M., STRAZHESKO, D.N.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 350-353

DATE PUBLISHED----------70

B

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY

TOPIC TAGS--RADIOACTIVE TRACER, ION, MANGANESE OXIDE, IRON OXIDE, SORPTION, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1599 STEP NO--UR/0069/70/032/003/0350/0353

CIRC ACCESSION NO--AP0125221

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125221

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN ESTABLISHED BY A DIRECT RADIOACTIVE TRACER METHOD THAT THE COUNTERIONS SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM WATER MIXTURES WITH ETHYL ALCOHOL, ACETONE AND DIOXANE IS PRACTICALLY INDEPENDENT OF THE ORGANIC COMPONENT CONTENT IN THE MIXTURE. TO ACCOUNT FOR THIS FACT IT IS SUGGESTED THAT ON THE SURFACE OF SUFFICIENTLY HYDROPHILIC PRECIPITATES STUDIED A STRONG ADSORPTION FILM IS FORMED FROM WATER MOLECULES, WHICH DOES NOT DISINTEGRATE EVEN AT HIGH CONCENTRATIONS OF ORGANIC SOLVENTS IN THE BULK OF THE LIQUID PHASE. FACILITY: INSTITUT FIZICHESKOY KHIMII AN USSR, KIEV. FACILITY: TEKHNOLOGICHESKIY INST. LEGKOY PROMYSHLENNOSTI, KIEV.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ON THE CHARGE DENSITY ON THE SURFACE OF DISPERSED PHASE OF GOLD HYDROSOL AT FAST COAGULATION THRESHOLDS -U-

AUTHOR-(05)-BARAN, A.A., GLAZMAN, YU.M., DERYAGIN, B.V., KUDRYAVTSEVA, N.M., STRAZHESKO, D.N.

B

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 167-170

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GOLD COMPOUND, COAGULATION, MICROSCOPY, CALCIUM COMPOUND, YITRIUM COMPOUND, RUBIDIUM COMPOUND, HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0767 STEP NO--UR/0069/70/032/002/0167/0170

CIRC ACCESSION NO--AP0108968

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310005-8"

2/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMOUNTS OF SORBED RB POSITIVE, CA PRIME2 POSITIVE AND Y PRIME3 POSITIVE COUNTERIONS AT THE FAST COAGULATION THRESHOLDS OF RED GOLD HYDROSOL HAVE BEEN MEASURED BY A RADIOMETRIC METHOD. THE COAGULATION THRESHOLDS HAVE BEEN DETERMINED FROM KINETIC CURVES OBTAINED BY FLOW ULTRAMICROSCOPY. ON THE BASIS OF THE DATA ON THE COUNTERIONS SORPTION IT HAS BEEN POSSIBLE TO ESTIMATE THE CHARGE DENSITY ON DISPERSED GOLD FROM THE SURFACE AREA VALUE. IT IS SUGGESTED THAT IN GOLD HYDROSOL THE OH NEGATIVE IONS ARE POTENTIAL DETERMINING.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MAGNETIC HYPERFINE AND QUADRUPOLE INTERACTIONS OF F-CENTRES IN NACL AS MEASURED BY ENDOR -U-

AUTHOR-(05)-DEIGEN, M.F., ZEVIN, V.YA., ISHCHENKO, S.S., BARAN, N.P., RUBAN, M.A.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 237-246

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--F CENTER, HYPERFINE STRUCTURE, QUADRUPOLE MOMENT, SODIUM CHLORIDE, NUCLEAR MAGNETIC RESONANCE, ELECTRON RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1075 STEP NO--GE/0030/70/037/001/0237/0246

CIRC ACCESSION NO--AP0107584

UNCLASSIFIED

2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0107584 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYPERFINE AND QUADRUPOLE INTERACTIONS OF F-CENTRES IN NACL WERE INVESTIGATED BY THE ENDOR METHOD. THE CONSTANTS OF HYPERFINE INTERACTIONS WITH NUCLEI OF COORDINATION SHELLS I TO X SURROUNDING THE VACANCY HAVE BEEN DETERMINED. THE QUADRUPOLE INTERACTION WITH NUCLEI OF SHELLS II, IV, VI, AND VIII HAS BEEN RECORDED AND MEASURED. GENERAL EXPRESSIONS FOR ENDOR FREQUENCIES ARE GIVEN IN SINGLE PARTICLE APPROXIMATION, ALLOWANCE BEING MADE FOR THE DEVIATION OF THE NUCLEAR SPIN QUANTIZATION AXIS FROM THE DIRECTION OF THE CONSTANT MAGNETIC FIELD II SUBO AND FOR CORRECTIONS DUE TO SECOND ORDER PERTURBATION THEORY. THE ANGULAR DEPENDENCE OF ENDOR SPECTRA HAS BEEN INVESTIGATED IN DETAIL AND FULLY EXPLAINED ON THE BASIS OF THEORETICAL FORMULAE. THE CONSTANTS WERE DETERMINED AT T EQUALS 20, 77, AND 300DEGREESK. FACILITY: INSTITUTE FOR SEMICONDUCTORS, ACADEMY OF SCIENCES, UKRAINIAN SSR. FACILITY: KIEV POLYTECHNICAL INSTITUTE.

UNCLASSIFIED

USSR UDC 622.215.2

BARANAYEV, M. K., VITELIS, V. M., and SHUMOV, K. M. (Moscow)

"Influence of the Shell Upon the Initial Parameters of an Underwater Explosion of a Cylindrical Explosive Charge"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 165-169

Abstract: An experimental determination is made of the initial parameters of shock waves in water during the explosion of cylindrical charges of trotyl in shells. It is shown that these parameters depend mainly upon the dynamic rigidity of the material and the relative weight of the shell. It is established that in the process of expansion of the charge shell during an explosion in a limited volume of water, a region of extremely rapid rarefication is formed, the boundary of which may be identified with the boundary between the detonation products and the water after destruction of the shell, which coincides in time with the arrival of the cavitation front. 3 figures. 3 tables. 8 references.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--REACTIONS OF BIS(TRIFLUOROMETHYL) NITROXIDE. VI. POLYMERIZATION OF TETRAFLUOROETHYLENE IN THE PRESENCE OF AN INITIATOR, SUCH AS

AUTHOR-(04)-MELNNIKOV, A.V., BARANAYEV, M.K., MAKAROV, S.P., ENGLIN, M.A.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 117-18

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYTETRAFLUOROETHYLENE, POLYMERIZATION, NITROGEN OXIDE, CHEMICAL REACTION MECHANISM, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1413 STEP NO--UR/0063/70/015/001/0117/0118

CIRC ACCESSION NO--AP0112407

2/2 027 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0112407

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. OF C SUB2 F SU84 WAS INITIATED BY 1-30PERCENT (CF SUB3) SUB2 NO (I) AT 240-50DEGREES TO GIVE A SOLID POLYMER (WHEN I CONCN. WAS 1-3PERCENT) OF MOL. WT. 2 TIMES 10 PRIME4. A REACTION MECHANISM WAS PROPOSED. THE PROPAGATION RATE CONST. WAS SIMILAR TO 25.5 L.-MOLE MIN AND THE TERMINATION RATE CONST. WAS SIMILAR TO 3,000.

UNCLASSIFIED

USSR

UDC 548.0

ARSEN'YEV, P.A., BARANOV, B.A.

"Some Properties Of Single Crystals Of Lithium Tantalate"

Tr. Mosk. energ. in-ta (Works Of Moscow Power Institute), 1972, Issue 96, pp 88-92 (from RZh: Elektrotekhnika i energetika, No 6, June 1972, Abstract No 6B95)

Translation: The point defects in single crystals of $LiTaO_3$, grown by the Czochralski method in air, were studied. After growing, the single crystals were annealed in a hydrogen atmosphere for one hour at a 600° temperature, and subsequently subjected to reiterated annealing in oxygen at the same temperature. After each annealing, the absorption spectra were taken at room temperature. On the basis of an analysis of the absorption spectra it is shown that under the influence of a reducing atmosphere, centers corresponding to absorption bands with maximums at 360, 500, and 620 nm are formed in the single crystals. 2 ill. V.I. Telyatnikov.

1/1

USSR UDC 621.313.333:538.4

ANDREYEV, A. M., BARANOV, G. A., FOLUBOVICH, G. P., POTEMIN, Yu. V.

"Cylindrical Induction Pump with Cooled Internal Magnetic Conductor"

Riga, Magnitnaya Gidrodinamika, No 3, Jul-Sep 72, pp 150-151.

Abstract: The authors attempted to develop a cylindrical induction pump with a reliable, easy-to-use cooling system for the internal magnetic circuit, equal or nearly equal to traditional designs in hydraulic properties. An example diagramed for pumping liquid metal coolants at 850°C can deliver 326 m^3/hr and develop a pressure of 4 kg/cm^2.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--REACTION OF HEXAFLUORODIMETHYLAMINE OXIDE. V. KINETICS OF THE REACTION OF HEXAFLUORODIMETHYLAMINE OXIDE WITH POLYHALOGENATED OLEFINS

AUTHOR-(04)-MELNIKOVA, A.V., BARANAYEV, M.K., MAKAROV, S.P., ENGLIN, M.A.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 382-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, HALOGENATED ORGANIC COMPOUND, ALKENE, FLUORINATED ORGANIC COMPOUND, AMINE, ORGANIC OXIDE, CHEMICAL REACTION RATE, ACTIVATION ENERGY, BUTENE, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1581 STEP NO--UR/0079/70/040/002/0382/0385

CIRC ACCESSION NO--AP0112575
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0112575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING VALUES AT INDICATED TEMP. WERE DETD. FOR TITLE REACTION RATE CONSTS. (K TIMES 10 PRIME6 MIN PRIME NEGATIVE1 MM PRIME NEGATIVE1) AND ACTIVATION ENERGIES (KCAL-MOLE), RESP. BETWEEN (CF SUB3) SUB2-NO. AND INDICATED OLEFINS: CF SUB2:CHF, 0DEGREES, 16.12, 7.0; 7DEGREES 16.7, 7.0; 22DEGREES 47.3, 7.0; CF SUB3 CF:CF SUB2, 0DEGREES, 2.67, 7.4; 22DEGREES, 7.4, 7.4; 50DEGREES, 228, 7.4; (CF SUB3) SUB2 C:CF SUB2, 100DEGREES, 4.2, 9.4; 140DEGREES, 10.6, 9.4; 170DEGREES, 31, 9.4; CF SUB2:CH SUB2 70DEGREES 5.43, 9.4; 100DEGREES 13.74, 9.4; AND PERFLUOROCYCLOBUTENE 170DEGREES 3.4, 9.9; 225DEGREES, 12.57, 9.9.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--REACTION OF FORMALDEHYDE AND HYDROGEN PEROXIDE IN ACID SOLUTIONS
-U-
AUTHOR--BARANCHIK, G.N., ZHIGUNOV, I.S., KOROLEVA, G.N., PETRAYEV, E.P.,
KOROLEVA, G.N.
COUNTRY OF INFO--USSR

B

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1),
119-21
DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CHEMICAL DECOMPOSITION, CHEMICAL
REACTION KINETICS, FORMALDEHYDE, HYDROGEN PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1075 STEP NO--UR/0419/70/000/001/0119/0121

CIRC ACCESSION NO--AP0104473
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECOMPN. OF CH SUB2 O IN AQ. H SUB2 O SUB2 WAS 1ST ORDER IN RESPECT TO BOTH REACTANTS IN THE TEMP. INTERVAL 20-60DEGREES, WHILE THE DECOMPN. OF H SUB2 O SUB2 IS ZERO ORDER IN RESPECT TO CH SUB2 O, AND 2ND ORDER IN RESPECT TO H SUB2 O SUB2 IN THE 20-40DEGREES INTERVAL, BUT 1ST ORDER AT 60DEGREES. THUS, THE REACTION INVOLVES THE OXIDN. OF CH SUB2 O BY 1 MOLE H SUB2 O SUB2 FORM H SUB2 O AND HCO SUB2 H, AND DECOMPN. OF 2H SUB2 O SUB2 TO YIELD 2H SUB2 O AND O AS SIMULTANEOUS REACTIONS. THE ZERO ORDER IN RESPECT TO CH SUB2 O INDICATES AN INTERMEDIATE COMPLEX FORMATION IN WHICH CH SUB2 O-O PROBABLY UNDERGO A REARRANGEMENT THAT RESULTS PROBABLY IN PERFORMIC ACID, WHICH THEN DECOMPS. TO EITHER HCO SUB2 H OR CO SUB2 PLUS H SUB2 O. KINETIC DATA ON THE REACTION WERE TABULATED.

UNCLASSIFIED

USSR

UDC 669.716:621.777.2

BARANCHIKOV, V. M., GLEBOV, Yu. P., GOROKHOV, V. S., DENISOV, S. M., [redacted], M. P., MILORADOVA, O. N., KHARENKO, V. F., and TSAREV, V. I.

"Development and Investigation of the Process of Pressing Rods and Shapes of Aluminum Alloys with Lubricant Without Press-Residue"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 129-137, resume

Translation: A number of problems related to the investigation of the process of pressing aluminum alloys with lubricant and the investigation of mechanical properties, macrostructure, and geometric dimensions of products are discussed. Technological-economical data on the process are presented. Five figures, nine tables, seven bibliographic references.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SOLUTION OF DISPERSION EQUATION FOR PLASMA BEAM SYSTEMS WITH ALLOWANCE FOR COLLISIONS OF ELECTRONS -U-

AUTHOR-(03)-BARANCHUK, N.S., KOTSARENKO, N.YA., LEVITSKIY, S.M.

COUNTRY OF INFO--USSR

B

SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, APR. 1970, P. 733-739

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DISPERSION EQUATION, PLASMA BEAM, ELECTRON COLLISION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1321 STEP NO--UR/0057/70/040/000/0733/0739

CIRC ACCESSION NO--AP0124972

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124972

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYTICAL SOLUTION OF THE DISPERSION EQUATION FOR THE PLASMA BEAM SYSTEM WITH ALLOWANCE FOR COLLISIONS OF PLASMA ELECTRONS WITH HEAVY PARTICLES. EXPRESSIONS ARE DERIVED FOR COMPLEX COEFFICIENTS CONCERNING THE PROPAGATION OF PLASMA WAVEGUIDE AND BEAM WAVES IN THE NEIGHBORHOOD OF THE SYNCHRONISM. UNDER REGIMES WHICH ARE OFF SYNCHRONISM, THE POSSIBILITY OF A RESISTANCE AMPLIFICATION IS INDICATED. FOR REGIMES FOR WHICH THE WEAK BEAM APPROXIMATION WAS NOT VALID, THE DISPERSION EQUATION WAS SOLVED BY MEANS OF A DIGITAL COMPUTER. FACILITY: KIEVSKII GOSUDARSTVENNYI UNIVERSITET, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

Acc. Nr: AP0037273 Abstracting Service: 4/70 Ref. Code: UR 0454

INTERNAT. AEROSPACE ABST.

B

A70-20950 # Illumination of zenith region of the sky during a solar eclipse on September 22, 1968 (Osveshchennost' okolozenitnoi oblasti neba vo vremia solnechnogo zatmeniia 22 Sentiabria 1968 g.). V. A. Barannenko (Dnepropetrovskii Inzhenerno-Stroitel'nyi Institut, Dnepropetrovsk, Ukrainian SSR), E. I. Doroshchuk (Dnepropetrovskii Gosudarstvennyi Universitet, Dnepropetrovsk, Ukrainian SSR), and V. E. Solov'ev (Shadrinskii Pedagogicheskii Institut, Shadrinsk, USSR). *Astronomicheskii Vestnik*, vol. 3, Oct.-Dec. 1970, p. 248, 249. In Russian.

Comparative measurements of the illumination of the zenith region of the sky a day before and during the solar eclipse on Sept. 22, 1968. The measurements were made during 8 hr by means of a luxometer. Results obtained show a distinct minimum of illumination at the middle of the eclipse period. Z.W.

SS

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12

REEL/FRAME
19730204

USSR

UDC 536,423.1:532.526

BARANENKO, V. I., and SMIRNOV, G. F. (Nikolayev - Odessa)

"An Optical Method for Investigating the Heat-Exchange Mechanism During Bubble Boiling

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 170-176

Abstract: In the article are presented the results of an experimental investigation of the heat-exchange mechanism during the bubble boiling of water with underheating in a free volume. The investigation was conducted by means of a grating-type laser interferometer. By means of processing the interferograms, it becomes possible to obtain local quantitative characteristics of the process, and to determine the scale of the temperature pulsations within the zone of action of the steam-formation center. Thus: a) the thickness of the thermal boundary layer, the local temperature pressure, the local specific heat flux, and the local coefficient of heat transfer change within considerable limits along the length of the heater; b) the greatest intensity of heat transfer is at the sites of action of the steam-formation centers, and the zone of action of the steam-formation center is 1-1.5 times the maximum diameter of the bubble;

USSR

BARANENKO, V. I. and SMIRNOV, G. F., Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 170-176

c) at the sites of action of the steam-formation centers the temperature profiles are nearly linear; d) the thermal boundary layer is restored to a large degree at the centers where bubbles are forming which have large diameters and, consequently, large waiting periods. 5 figures. 1 table. 6 references.

2/2

USSR UDC 536.248.2

BARANENKO, V. I., KARDASHEV, YU. D.

"Investigation of Heat Transfer During Boiling by the Optical Method"

Tr. Nikolayevskogo korablestroit. in-ta (Works of the Nikolayev Shipbuilding Institute), 1970, Vol 33, pp 31-38 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.666)

Translation: Description is given of an experimental apparatus for the investigation of the mechanism of heat transfer during boiling in a large space with the help of a diffraction shadow interferometer. Results are presented of the calibration tests obtained during boiling of underheated water under the conditions of atmospheric pressure and a description is given of the method of computation of interference patterns. 4 ill., 5 bibl. entries.

Resume

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF SUBSTITUENTS IN ARENETRICARBONYLCHROMIUM COMPLEXES ON THE ISOTOPIC EXCHANGE OF HYDROGEN IN AN ALKALINE MEDIUM -U-
AUTHOR-(04)-SETKINA, V.N., BARANETSKAYA, N.K., ANISIMOV, K.N., KURSANOV, D.N.
COUNTRY OF INFO--USSR

B

SOURCE--IAV. AKAD. NAUK SSSR, SER. KHIM 1970, (2), 473-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHROMIUM COMPLEX, ISOTOPE EXCHANGE, HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1680 STEP NO--UR/0062/70/000/002/0473/0474

CIRC ACCESSION NO--AP0125301
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125301
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING RATE CONSTS. WERE REPORTED FOR ISOTOPIC H EXCHANGE IN BASIC SOLN.: ME SUB2 NPHCR(CO) SUB3 0.3 (SEC PRIME NEGATIVE1, TIMES 10 PRIME NEGATIVE5), BZONACR(CO) SUB3 0.7 (SEC PRIME NEGATIVE1, TIMES 10 PRIME NEGATIVE5), FOR THE REACTION WITH ETOD IN THE PRESENCE OF ETONA AT 100DEGREES IN A SEALED TUBE. EVIDENTLY ELECTRON DONOR AND ACCEPTOR GROUPS SHOW A WEAK EFFECT ON THIS EXCHANGE AMONG SUCH COMPDS. OF CR. FACILITY: INST. ELEMENTOORG. SOEDIN., MOWCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM TRICARBONYLS IN AN ACID MEDIUM -U-
AUTHOR-(05)-KURSANOV, D.N., SETKINA, V.N., BARANETSKAYA, N.K., ZDANOVICH, V.I., ANISIMOV, K.N.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1103-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOTOPE EXCHANGE, CHROMIUM COMPOUND, CARBONYL COMPOUND, BENZENE, ORGANOCHROMIUM COMPOUND, ORGANIC PHOSPHORUS COMPOUND, DEUTERIUM COMPOUND, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0497 STEP NO--UR/0020/70/190/005/1103/1105

CIRC ACCESSION NO--AT0113388
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0113388

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATE CONSTS. OF THE ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM CARBONYLS IN ACID MEDIA ARE INVESTIGATED. THE EXCHANGES OF C SUB6 H SUB6, C SUB6 H SUB6 CR(CO) SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB3. C SUB6 H SUB6 CR(CO) SUB2 PPH SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB2 PPH SUB3, AND MEOC SUB6 H SUB5 CR(CO) SUB2 PPH SUB3 IN CF SUB3 CO SUB2 D ARE STUDIED. THE RATE CONSTS. OF ALL COMPDS. ARE FOUND TO BE ON THE ORDER OF 10 PRIME NEGATIVE 6 TO 10 PRIME NEGATIVE 7 WITH THE EXCEPTION OF C SUB6 H SUB6 WHICH IS 10 PRIME7 TIMES FASTER. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

Transformation and Structure

USSR UDC 669.15.018.2:620.182

YANCHISHIN, F. P., and BARANETSKIY, V. S., Institute of Physico Mechanics of the Academy of Sciences, Ukrainian SSR, L'vov

"Study of the Structure and Properties of Pre-Loaded Kh18N10T Steel During Extension"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1970, pp 38-43

Abstract: Results are presented from a combined study of the structure and properties of pre-loaded Kh18N10T steel during active extension. The processes of deformation in the metal during short-term extension of specimens are arbitrarily divided into three periods, and the nature of the change in physical-mechanical properties and kinetics of the change in structure are studied in each of the three periods as functions of the level of preliminary loading. Preliminary static loading of specimens which had been polished to class 11 surface smoothness by electropolishing in a solution of 60% orthophosphoric acid was performed for 100 hours in air at room temperature on the same device later used for rapid extension. The three periods of extension were from the beginning of application of load to a point corresponding to 20% residual deformation, then from that point to the point of maximum force, then from that point to the rupture point.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STRUCTURE AND PROPERTIES OF STEEL 08KP AFTER PRELIMINARY LOADING UNDER STRAIN -U-

AUTHOR-(04)-MAKSIMOVICH, G.G., YANCHISHIN, F.P., MOSEYCHUK, V.I., BARANETSKIY, V.S.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 6(1), 19-25

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY DESIGNATION, STRAIN, MECHANICAL PROPERTY, ELECTRIC RESISTANCE, RESISTIVITY, RIMMED STEEL, LOW CARBON STEEL/(U)08KP RIMMED STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0401 STEP NO--UR/0369/70/006/001/0019/0025

CIRC ACCESSION NO--AP0126156

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0126156
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE EFFECTS OF THE PRELIMINARY LOADING UNDER STRAIN ON THE STRUCTURE AND PROPERTIES OF STEEL 08KP IS GIVEN. THE EXPTS. WERE CARRIED OUT ON WELL ANNEALED (1 HR AT 930DEGREES IN VACUUM AND FURNACE COOLED) AND POLISHED SPECIMENS; PRELIMINARY LOADING WAS CARRIED OUT IN AIR AT ROOM TEMP. BY APPLYING STRAINS SIGMA SUBP EQUALS 0, 5, 10, 15 AND 25 KG-MM PRIME2 DURING 100 HR. THE STRUCTURE OF THE PRELIMINARY LOADED SPECIMENS DIFFERS FROM THAT OF THE INITIAL (NONLOADED); FERRITE GRAIN SIZE IS DECREASED; NEW SUBGRAIN BOUNDARIES ARE FORMED, AND THE SLIP BANDS ARE VISIBLE. VICKERS HARDNESS REMAINS FOR SIGMA SUBP SMALLER THAN 10 KG-MM PRIME2 PRACTICALLY UNAFFECTED WHILE FOR SIGMA SUBP GREATER THAN 10 KG-MM PRIME2 IT INCREASES AND FOR SIGMA SUBP EQUALS 25 KG-MM PRIME2 REACHES AN INCREASE OF 35PERCENT. ELEC. RESISTIVITY FOR SMALL SIGMA SUBP (SMALLER THAN 10 KG-MM PRIME2) DECREASES AND REACHES A MIN. (SIMILAR TO 3PERCENT), BUT RISES WITH FURTHER INCREASE OF SIGMA SUBP. PRELIMINARY LOADING WITH SIGMA SUBP EQUALS 25 KG-MM PRIME2 INCREASES ALSO THE TENSILE STRENGTH 27PERCENT AND YIELD STRENGTH 54PERCENT. THE STRUCTURE OF THE PRELIMINARY LOADED SPECIMENS IN THE FRACTURE ZONE IS FINE GRAINED WHILE FOR THE INITIAL (NONLOADED) SPECIMENS THE STRUCTURE IS COARSE GRAINED.
FACILITY: FIZ.-MEKH. INST., LVOV, USSR.

UNCLASSIFIED

BARANIK, I. Ye.

JPRS - 54173
01 OCT 71

UDC 615.472:615.835.35]:615.462

ANALYSIS OF STRUCTURAL STRENGTH OF THE SHELL OF A THERAPEUTIC PRESSURE CHAMBER BUILT OF ORTHOTROPIC TWO-PLY FIBERGLASS

[Article by I. Ye. Baranik, V.P. Khoroshilov, I.V. Kamenskiy, T.A. Sultanov and V.P. Shidlin, of the North Donets Branch of the All-Union Scientific Research and Structural Institute of Chemical Engineering and All-Union Scientific Research Institute of Surgical Equipment and Instruments, Moscow; Meditsinskaya Tekhnika, Russian, No 3, 1971, pp 29-31]

Steel is the most widely accepted material used for building shells of various types of pressure chambers. The main disadvantage of steel is its weight, which makes its use in clinical conditions difficult. For technological reasons, the use of titanium is limited so far. Thus, the most promising material is fiberglass, because of its light weight, high strength, technological qualities, and low cost. The strength of a pressure chamber shell can be calculated only when certain investigations are carried out in advance.

The fiberglass shell of a pressure chamber is a thin-walled spun shell of positive curvature. In order to join the shell with other subassemblies, metal stiffening rings are installed at each end of the shell. Under the uniform action of inner force loading, plane stress is generated in the shell wall, with the principal stresses oriented along the annular and meridian directions. To best utilize the anisotropy of the fiberglass, the method of separate two-layer longitudinal and transverse winding is used in manufacturing the shell. A layer is the entire thickness of the wall formed by the winding in one direction, irrespective of how many times (prokhodov) the glass fiber is turned around. Longitudinal and transverse winding does not permit obtaining the optimal thickness in a shell of double curvature, inasmuch as, in contrast to the easily obtainable necessary

USSR

UDC 669.721.372

BARANNIK, I. A., YASTREBOVA, Z. V., YEGOROV, A. P., ZHUROV, V. V., CHUKAL'SKIY, YE. N., BOGDANOV, A. P.

"Industrial Investigation of the Influence of Titanium Impurities on the Electrolysis of Magnesium Chloride"

Tsvetnye Metally, No 8, 1971, pp 40-42

Abstract: Results are presented from a chemical analysis of the presence of titanium in the raw material and products of electrolysis. Material balances with respect to titanium are calculated for several commercial electrolyzers. It is demonstrated that regardless of the content of fluorine in the electrolyte, the decrease in the yield of magnesium per current may reach 5-20% when lower titanium chlorides are added to the electrolyzer. The influence of metallic titanium is significantly weaker. On the basis of an analysis of results of commercial studies, necessary measures to combat the harmful influence of titanium on electrolysis are discussed.

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USSR

UDC 669.721.41

VIKHAREV, A. F., RODYAKIN, V. V., and BARANIK, I. A.

"Lower Titanium Cloride Refining of Magnesium"

Sb. tr. Vses. n.-i. i proyektn. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 76-81 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G140)

Translation: During this reduction of titanium by magnesium from salt master alloys of the lower Ti chlorides, a high-dispersion Ti is produced which possesses very high refining properties as compared to Fe and Si in Mg. A study is made of the effect of composition of salt master alloys of lower titanium chlorides, their quality and quantity, and also of the method of their preparation with regard to refining properties and as regards the alloys in Mg. The consumption coefficients and the basic parameters of the Mg refining techniques with lower Ti chloride alloys are established. 2 ill., 2 tables, 7 biblio. entries. Author's Abstract.

1/1

USSR UDC: 620.197.3

TRET'YAKOVA, G. A., Engineer, BARANNIK, V. P., Doctor of Technical Sciences

"Protecting Components from Corrosion in Precision Instrument Making"

Kiev, Tekhnologiya i Organizatsiya Proizvodstva, No 4, Jul/Aug 72, pp 85-87

Abstract: The authors discuss means of preventing corrosion of precision metal parts due to perspiration deposits accumulated during handling. An investigation was made into the feasibility of protecting metal from such corrosion by washing in benzine containing inhibitors. Tests showed that washing in solvents containing corrosion-inhibiting additives creates a barrier which prevents penetration of aggressive substances to the surface of the part. The best corrosion inhibitor was found to be a mixture of fatty acids with at least 20 hydrocarbon atoms separated from still residues. The film formed by washing in a 1% solution is entirely imperceptible and does not interfere with any operations.

1/1

Acc. Nr: AP0049341 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0365

B

103580e Corrosion of ship structural materials in sea water. Lagutina, A. G.; Danil'chenko, K. P.; Shevchenko, O. F.; Barannik, V. P. (USSR). *Zashch. Metal.* 1970, 6(1), 48-51 (Russ). Sea exposures were operated at a 40 m depth with daily elevation by 1.5 to 4 m/day; the samples became badly covered with seaweed and various marine deposits, and with Fe the corrosion layer assumed a yellow color. Synthetic sea waters were less corrosive. Under lab. conditions, natural sea water (pH 8.7) was most corrosive with rapid circulation and aeration, but in any case more corrosive than synthetic sea water. Results in flowing sea water were: St 3C 0.053; AlMg-61 0.012; Monel NiMoFeMn-28-2.5-1.6 0.009; brass L-62 0.007; Br AlMn-9-2 0.006; 1Cr18Ni10Ti 0.0; and 0 Cr17Ni7Al 0.0 g/m²/day corrosion loss. Some variation was noted in the Black Sea tests, presumably from greater biol. action. H. Marshall

1/1

REEL/FRAME
19801158

18

USSR

B

LAGUTINA, A. G., DANIL'CHENKO, K. P., SHEVCHENKO, O. F., and BARANNIK, V. P.

"Corrosion Study of Shipbuilding Materials in Sea Water"

Moscow, Zashchita Metallov, Vol 6, No 1, Jan-Feb 70, pp 48-51

Abstract: Comparative data on the corrosion resistance of metallic materials most commonly used in shipbuilding (ZS steel, AMT_g-9-2, NMZhTs-28-2.5-1.6 monel metal, AM_g-61, 1Kh18N10T, OKh17N7Yu stainless, L-62 brass) in natural (sea water) and laboratory (synthetic and natural sea water) conditions are given. The following was established: a) the corrosion rate of some shipbuilding materials tested in sea water at complete immersion is much higher than the corrosion rate of the same metals tested under laboratory conditions both in synthetic and sea water. After one year of testing, the corrosion rate of brass and AMg-61 alloy at sea is 5 to 6 times higher than in nonrunning water under laboratory conditions; b) tests of stainless and monel metal revealed not only a difference in corrosion rate but also in its nature. 1Kh18N10T and OKh17N7Yu stainless as well as monel metal did not corrode in natural sea water in the laboratory but underwent strong pitting corrosion at sea; c) the basic factors accelerating the corrosion of shipbuilding materials under natural sea water conditions are biological, which are conducive to changes in the physico-chemical properties of sea water, as well as mechanical (natural mixing of sea water accelerating the cathodic reaction of the corrosion process).

1/1

USSR UDC 51:155.001.57:681.3.06

PUTYATIN, Ye. P., BARANNIK, V. V., PUTYATINA, G. M., SHUL'GIN, I. V.

"Statistical Aspects of the Recognition of Color Shadings"

Probl. Bioniki. Resp. Mezhved. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 74-80, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V648 by the authors).

Translation: Statistical problems of recognition of color are studied, an algorithm of recognition is suggested, considering the probable thresholds of vision in three channels. The design of a device for recognition of color shadings is discussed.

USSR UDC 669.715:548.4

BARANOV, A. A., MOVCHAN, V. F., and CHERNYSHEVA, I. A., Dnepropetrovsk

"Effect of Fusion on Volume Growth of Aluminum Alloys During Thermal Cycling"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 74, pp 164-168

Abstract: Alloys were prepared from aluminum grade AVO with semiconductor silicon (2.5 and 5 wt %) and electrolytic copper (4.5, 5.0, 6.0, 7.0, 7.5, and 9 wt %) for the purpose of studying grain boundary fusion during heating which lowers the properties of heat-resisting alloys. These alloys were subjected to thermal cycling which involved heating them from their eutectic temperature + 10° and cooling to room temperature or cooling them from the eutectic temperature to -40°C and heating to room temperature for a finite number of cycles. Heating the alloys to above the eutectic temperature causes grain-boundary fusion and the formation of gas pores and cracks, which in turn causes volume growth and reduced density. The amount of growth is a function of the copper and silicon content which increases with increased alloy content. It was observed that thermal cycling in a vacuum lowered density more than when cycling in air and that density drop was less when the alloys had been produced in a sand mold rather than a chill mold.
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USSR

BARANOV, A. A., et al Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 74, pp 164-168

O. V. LEBDEV, L. A. SHEVCHENKO, and V. V. YASHCHENKO, participated in these experiments. Three figures, 12 bibliographic references.

2/2

USSR

UDC 621.317.421

MELIK-SHAKHNAZAROV, V. P., VOLKOV, I. I., BARANOV, A. A. and KORGANOVA, O. G.

"Device for Measuring the Induction of Constant Magnetic Fields"

Moscow, Izmerital'naya Tekhnika, No 6, 1972, pp 51-52

Abstract: A uniquely designed, self-compensating device for measuring the induction of constant magnetic fields, operating on the basis of a commercially available Hall generator, has been developed by the authors at the "Information Measurement Engineering" department of the Kuybyshev Polytechnical Institute. This device does not possess the drawbacks of the devices conventionally used for this purpose, such as manual balancing and thermal stabilization of the Hall generator, and a value of the electrical output signal which is insufficient for automatic signal measurement and recording.

The specifications are: measurement limits - 0.001 0.01, 0.1 T; basic error, not taking into account the error of the output instrument, about 1%; nominal output current - 3 ma; pass band - 1 Hz; supply voltage 220v ≠ 10%, 50 Hz. The device is made from series-produced, domestically manufactured subassemblies and parts, and is suitable for expensive application in various branches of the electrical engineering industry, as well as for development

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USSR

MELIK-SHAKHNAZAROV, V. P., et al., Izmerital'naya Tekhnika, No 6, 1972, pp 51-52

and research on various automation and information-measurement facilities. 2 figures. 4 references.

2/2

B

USSR UDC: 669.15-194:669.26:620.186

BARANOV, A. A., BLIZNYUKOVA, L. A., GLEBOVA, E. D., and KARPOV, N. A.

"Structural Changes Upon Deformation and Annealing of Iron-Chromium Alloys"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 120-124

Abstract: The changes in the structure of vacuum treated alloys of iron with chromium in quantities of 25, 37, and 50% were studied with cold deformations of 5, 20, and 45% and subsequent heating to 400-1200°C. Deformation was by slipping and twinning, with the twinning increasing with increasing chromium content. The development of recrystallization in the deformed alloys was noted at 700°C. In alloys containing chromium 35 [sic] and 50%, recrystallization was accompanied by formation of the σ-phase. The changes in the twinning structure, polygonization, and grain growth occurring during heating are described. Three illustrations; two tables; seven biblio. refs.

1/1

USSR UDC: 535.34

ZAVADOVSKAYA, Ye. K., LISITSYN, V. M., BARANOV, A. I., FEDOROV, V. A., STEPANOV, V. G., Tomsk Polytechnical Institute imeni S. M. Kirov

"Radiation-Induced Transformation of Defects in CaF_2, SrF_2, and BaF_2"

Tomsk, Izvestiya VUZov: Fizika, No 2(129), 1973, pp 110-112

Abstract: The paper presents the results of an investigation of radiation-stimulated processes of transformation of defects in fluorides of alkali-earth metals. The crystals were grown from purified natural fluorides and also from synthesized, chemically pure salts. The crystals were subjected to electron bombardment at 1-1.8 MeV at room temperature and also in a stream of low-temperature plasma at an air pressure of 1-2 mm Hg. The EPR spectra were measured at room temperature on a Thomson-251 spectrometer. It is found that radiation in these crystals converts simple electron defects with active participation of holes to radiation-stable and heat-stable defects. The greatest effect of the radiation-stimulated processes is observed in CaF_2.

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USSR UDC 621.396.6--181.5 (088.8)

BARANOV, A.I., BATSKIAURI, V.D., VOSKOBOYNIKOV, I.I., GAVRILOV, R.A., GALYATKIN, V.P., GOLUBTSOV, M.S., ZAMIKHOVSKIY, M.B., ZALIPSKIY, A.I., ZLOTIN, V.A., KAZATSKER, L.I., LAGUTKIN, G.V., LARIONOV, YU. S., PREOBRAZHENSKIY, S.P., MALKIN, D.L., RAMENSKIY, I.V., SIMECHOVA, I.S., TIKHONIROV, B.G., FISHEL', I.SH., SHUBERT, M.M.

"Device For Deposition Of Multilayer Coverings In A Vacuum"

USSR Author's Certificate No 279291, filed 16 June 68, published 30 Nov 70 (from RZh--Radiotekhnika, No 9, Sep 1971, Abstract No 9V272P)

Translation: A device proposed for deposition of multilayer coverings in a vacuum is fulfilled in the form of a number of successively mounted independent operating chambers supplied with evaporators, heaters, and an exhaust system. The device contains a mechanism for transporting substrates, a mechanism for loading and unloading, and a drive mechanism. With the object of increasing the reliability of the device and improving the quality and reproducibility of the coverings deposited, outside of the area of the arrangement of operating chambers and parallel to it a supplementary vacuum chamber is installed, which serves for the deposition in it of the transporting mechanism, and which communicates with each of the operating chambers by means of vacuum-overlapping transfer windows located on the side wall

USSR

BARANOV, A. I., et al., USSR Author's Certificate No 279291, filed 16 June 68, published 30 Nov 70 (from RZh--Radiotekhnika, No 9, Sep 1971, Abstract No 9V272P)

of the supplementary chamber at places for connection to it of the operating chambers. Each of the operating chambers or a group of them is provided with an individual system of high-vacuum pumping.

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UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

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236676 ARGON-ARC WELDING TORCH has a water-cooled arrangement in the form of two coaxial cylindrical channels inside a housing, which are joined at the lower part by radial openings. To reduce the protrusion of the electrode to 10-15mm the ratio of length of cylindrical part of nozzle to its bore is made 0.3-0.6 and this improves the life of the tungsten electrode. 30.11.67. as 1200836/25-27. A.K.BARANOV et alia. (19.6.69.) Bul.7/3.2.69. Class 21h. Int.Cl. B23k.

AUTHORS: Baranov, A. K.; Kryukovskiy, V. N.; Kucherenko, G. P.; Konradi, G. G.; Raymond, E. D.; Agroskin, Ya. Z.

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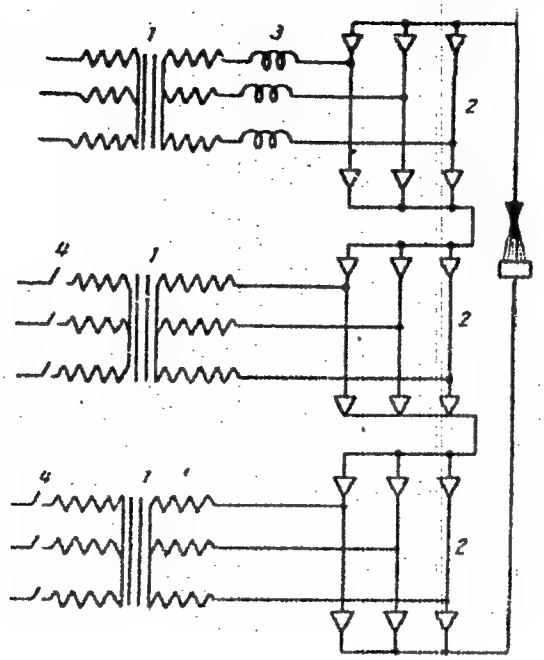

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310005-8"

USSR

UDC: 621.374.5(088.8)

DYUKOV, L. V., TABAKOV, G. A., BARANOV, A. N., TIKHONOVICH, V. V.

"A Device for Correcting the Flat Section of a Pulse"

USSR Author's Certificate No 266829, filed 3 June 69, published 2 July 70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G302 P)

Translation: This Author's Certificate introduces a device for correcting the flat section of a power modulator pulse. The device consists of a controllable resistance (e. g. a lamp) connected in series or parallel with the load, an amplifier in a feedback circuit, a comparison element, and a reference voltage source. To reduce losses in the regulator and ensure zero-lag action of the device, the comparison element and reference voltage source are made in the form of a capacitor and electronic switch in a series circuit which is connected in parallel with the load resistance. The common point between capacitor and switch is connected to the high-resistance input of the feedback amplifier.

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USSR UDC [537.226+537.311.33]:[537+535]

BARANOV, A. V., VOROB'YEV, G. A., PERVUKHIN, N. P., and KHOROMENKO, A. A.

"Study of the Breakdown of Silicon Monoxide Films at Constant Voltage"

Izv. Tomsk. politekhn. in-ta (News of Tomsk Polytechnical Institute), 1971, Vol 180, pp 84-88 (from RZh Fizika, No 12, Dec 71, Abstract No 12Ye1233)

Translation: The thickness of the SiO films was d = 300-5000 Å. It was observed that E_{br} rises with a decrease in d and that E_{br} drops when the upper electrode is the cathode. These facts support the electrical character of the breakdown of SiO film.

1/1

USSR

UDC 621.791.756:669.715

RABKIN, D. M., ISHCHENKO, A. Ya., SINCHUK, A. G., Institute of Electric Welding imeni Ye. O. Paton and PORTNOY, N. D., KUKLINA, S. S., and BARANOV, A. V., Ural Railroad Car Plant imeni F. E. Dzerzhinskiy

"Electroslag Welding of Large-Cross-Section Pressed Profiles From AMg6 Alloy"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 52-54

Abstract: A description is given of the process of electroslag welding of large-dimensioned rings made of AMg6 aluminum alloy. The process was developed by the two institutions of which the authors named above are members, working in collaboration, and has been put into production. The weldings were from plane electrodes made of the AMg6 alloy (GOST standard 4784-65) and SvAMg7 alloy (GOST 7871-63). This method of welding is said to be the most convenient for short seams on large-dimensioned specimens, offering the advantages of high productivity, reduced difficulties in production, reduced expenditures of electrical energy and auxiliary materials, and improved working conditions for employees. A table gives the compositions of the AMg6 and SvAMg7 alloys.

1/1

USSR UDC: 621.373:530.145.6

FARSHTENDINER, V. L., TOLCHINSKAYA, R. M., KLYUYEV, V. P., BARANOV, B. A., ANGERT, N. B.

"A Method of Making Monodomain $LiNbO_3$ Crystals of 0° Orientation"

USSR Author's Certificate No 280450, filed 21 Jun 68, published 10 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D239 P)

Translation: This Author's Certificate introduces a method of making monodomain $LiNbO_3$ crystals of 0° orientation. As a distinguishing feature of the patent, the size and yield of the output product are increased by annealing the crystal grown to the necessary dimensions at 1160-1180°C for 30-60 minutes under a voltage of 15-25 V, then cooling the crystal to 1025-1125°C while reducing the voltage by 25-40 percent followed by cooling of the crystal at a rate of 25-30°C/hr.

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Measuring, Testing, Calibrating

USSR UDC 624.131.43+539.21.084-492.3

BARANOV, D. S.

"Resistance Strain-Gauge Hydraulic Dynamometer With Hydraulic Converter Developed by the Central Scientific Research Institute of Structural Parts, Updating of Design and Manufacturing Technology"

V sb. Tenzometrich. pribory dlya issled. stroit. konstruktsiy (Strain-Gauge Devices for Studying Structural Parts--collection of works), Moscow, Stroyizdat, 1971, pp 4-20 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V430)

Translation: The paper deals with the problems involved in the methods of measuring stresses in inelastic media, design of stress gauges (hydraulic dynamometers), methods of studying their metrological properties, requirements for accuracy of instruments, and comparison of some hydraulic dynamometer designs. The structural peculiarities of hydraulic dynamometers developed by the Central Scientific Research Institute of Structural Parts are described. The basic element of these dynamometers is a hydraulic converter which consists of two sensitive elements: a piston connected to

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USSR

BARANOV, D. S., Tenzometrich. pribory dlya issled. stroit. konstruktsiy, Moscow, Stroyizdat, 1971, pp 4-20

the dynamometer housing by an annular diaphragm, and a measurement membrane. The pressure of the medium acting on the piston is transmitted through a thin (0.2-0.3 mm) layer of liquid to the measurement membrane whose deformation is sensed by resistance strain gauges. The hydraulic dynamometers made by the institute of construction parts are distinguished from conventional diaphragm dynamometers in that the measurement membrane is surrounded by the massive thick ring of the housing which shields the membrane from the effect of radial forces. The author considers problems involved in design modifications and improving the technology of making the dynamometers. It is noted that standard sizes of the instruments can be used to study stresses in loose dry materials, for investigating the stressed state of hydraulic structures and foundations in the soil, and in setting up laboratory studies on models of equivalent materials. Yu. M. Kartashov.

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USSR

YEFIMOV, Yu., BARANOV, G., GALALU, V., and ROMENSKIY, Ye.

"Digital Functional Converter With Nonuniform Separation of the Argument"

Moscow, Elektronno-Vychislitel'naya Tekhnika i Programmirovaniye No. 4, 1971, pp 109-111

Abstract: A possible method for shortening the computation time in electronic computers, the use of a special functional converter operating in conjunction with the computer, is discussed. It is noted that analog functional converters are useless because of poor accuracy and the complexity of devices that must be connected with the computer. The digital functional converter, however, is convenient for obtaining functional dependence of the $y = f(x)$ type with a finite number of plotting points, with intermediate values found through interpolation methods. Two graphs showing approximations of curves with uniform separation and with nonuniform separation are shown for the sake of contrasting the two methods; the much closer approximation of nonuniform separation of interpolated points is strikingly evident. A functional diagram of the converter is given, together with an explanation of its operation. From prototypes of the various units in the converter

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USSR

YEFIMOV, Yu., et al, Elektronno-Vychislitel'naya Tekhnika i Programmirovaniye, No. 4, 1971, pp 109-111

and their behavior, the authors draw the conclusion that when the converter is made of the elements used in the "Ural-10", the time for computing the functional dependence y = f(x) is less than 10 μs, as compared with the time of 2-10 ms for the "Minsk-2" to compute even the simplest functions.

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USSR

UDC 621.313.333:538.4

BARANOV, G. A., KIRILLOV, I. R., and OGORODNIKOV, A. P.

"Hydraulic Characteristics of an Experimental Active-Type, Molten Metal MHD Generator Channel"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 112-114

Abstract: The hydraulic characteristics of a slotted channel of a molten metal MHD generator of the active type with an expansion angle of 12° 30' are presented as well as the distribution of static pressures along the length of the channel without a magnetic field and during interaction of the flux with the traveling magnetic field. Channel tests showed that the hydraulic properties of the flow tract were fully satisfactory and disruption of flow from the walls of the channel does not occur for a large change in the Reynolds' number. 2 figures, 3 bibliographic references.

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UDC: 518.5.681.3.06

USSR

BARANOV, G. I., PROTASOV, N. M.

"Program for Calculation of the Vibrations of Molecules on the M-220 Digital Computer"

Sb. nauch. tr. Kuzbas. politekhn. in-t (Collected Scientific Works of the Kuznetsk Basin Polytechnical Institute), 1970, No 28, pp 119-134 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V767)

[No abstract]

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1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--TEMPERATURE INDUCED CHANGES IN THE RAMAN SPECTRUM OF ANTIMONY TRICHLORIDE -U-

AUTHOR-(02)-KOZULIN, A.T., BARANOV, G.I.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970 13(1) 85-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--RAMAN SPECTRUM, ANTIMONY CHLORIDE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0995 STEP NO--UR/0139/70/013/001/0085/0088

CIRC ACCESSION NO--AT0102929

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0102929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RAMAN SPECTRA OF SBCL SUB3 WERE MEASURED AT MINUS 150, MINUS 25, AND 20DEGREES. BY USING THE VALUES OF NUCLEAR QUADRUPOLE RESONANCE, THE LOW FREQUENCIES WERE ASSIGNED. THE NU SUB3, NU SUB4, AND NU SUB5 FREQUENCIES OF 49, 63, AND 66 CM PRIME NEGATIVE1 (MEASURED AT 20DEGREES), RESP., BELONG TO THE ROTATIONAL OSCILLATIONS OF THE SBCL SUB3 MOL. WITH REGARD TO THE X AND Y AXES, WITH THE MOMENTS OF INERTIA I SUBX AND I SUBY OF 494.52 TIMES 10 PRIME NEGATIVE40 AND 506.55 TIMES 10 PRIME NEGATIVE40 G-CM PRIME2, RESP.. THE NU SUB1 AND NU SUB2 FREQUENCIES OF 33 AND 37 CM PRIME NEGATIVE1, RESP., WERE ATTRIBUTED TO THE ROTATIONAL OSCILLATIONS WITH REGARD TO THE Z AXIS, WITH A MOMENT OF INERTIA I SUBZ EQUALS 718.9 TIMES 10 PRIME NEGATIVE40 G-CM PRIME2. THE NU SUB6 FREQUENCY OF 92 CM PRIME NEGATIVE1 WAS ASSIGNED TO THE TRANSLATION VIBRATIONS. THIS ASSIGNMENT IS CONFIRMED BY THE MEAN VALUE OF QUASI GROUP FORCES (4.8 TIMES 10 PRIME NEGATIVE12). THE CHANGES OF THE ASYMMETRY PARAMETER, CAUSED BY A TEMP. DISTORTION OF THE SBCL SUB3 PYRAMID IN THE CRYSTAL LATTICE, CAN BE EVALUATED ON THE BASIS OF A CORRELATION OF THE LIFTING DEGREE OF STRETCHING VIBRATION DEGENERACIES WITH THE ASYMMETRY PARAMETER; THE ASYMMETRY PARAMETER CHANGE, CALCD. FROM EXPTL. RESULTS OBTAINED AT A TEMP. CHANGE FROM MINUS 150 TO PLUS 20DEGREES IS 1.8PERCENT.

UNCLASSIFIED

USSR

UDC 543.422.4;547.1'118

MATROSOV, YE. I., BARANOV, G. M., PEREKALIN, V. V., KABACHNIK, M. I., and MASTRYUKOVA, T. A., Institute of Heteroorganic Compounds, Academy of Sciences USSR, and Leningrad State Pedagogical Institute imeni A. I. Gertsen

"IR Spectra and Hydrogen Bonds in Some Organophosphorus Derivatives of Nitro Alcohols"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71, pp 2572-2575

Abstract: The article describes results of a spectral study of organophosphorus derivatives of nitro alcohols -- 0,0-dialkyl- α -hydroxy- β -nitroalkyl phosphonates of the type: $(RO)_2P(O)-C(OH)CH_3-CHR'NO_2$; R=$C_2H_5$ (I), i-C_3H_7 (II); R'-H (a), CH_3 (b), C_6H_5 (c). The results indicate the formation in the solid state of intermolecular H bonds formed by OH and P=O groups. There is equilibrium of free and associated molecules in solutions of the phosphonates.

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USSR

UDC 621.791.85.03

NAZARENKO, O. K., ZHUVAZA, L. I., OBOLONSKIY, A. P., BARANOV, G. V., Institute of Electric Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences

"Cathode-Ray Unit with Programmed Control and Television Observation of the Welding Process"

Kiev, Avtomaticheskaya Svarka, No 7, 1971, pp 53-54

Abstract: A cathode-ray device of the U-342 type in which all the basic welding operations have been automated is described. The device was built at the Institute of Electric Welding imeni Ye. O. Paton. It permits preliminary and subsequent heat treatment of the products and welding of them. Five basic parameters of the operating conditions are recorded during the welding process: the beam current, the accelerating voltage, the current of the magnetic focusing system of the gun, the welding speed, and the vacuum in the welding chamber. The electric circuit of the device permits programming for automatic execution of three operations: preliminary treatment of the weld by a sharply focused low-power beam to remove contamination from the edges, welding by a sharply focused beam, and repeated welding by an unfocused beam of lower power with simultaneous transverse scanning of it with a frequency of 50 hertz. The device has been introduced into industrial use on automated lines.

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USSR

UDC 669.293:537.312.62

LEKSINA, I. YE., MOTULEVICH, G. P., SHUBIN, A. A., BARANOV, I. A. SYTNIKOV, V. A., and SHMULEVICH, R. S., Physics Institute imeni P. N. Lebedev

"Optical Properties of Superconducting Nb-Ti Alloys"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 97-107

Abstract: An experimental investigation of the optical properties of superconducting Nb-Ti alloys is reported. The samples were prepared from electron-beam-melted niobium (99.9) and titanium iodide; the experimental and measuring techniques are described. Optical constants n and kappa ($\varkappa$) of electrolytically polished cubic Nb-Ti beta-solutions with atomic Nb concentrations of 25,40,52,70, and 85 were measured in the 1-10 micron special range at room temperature. The same samples were used for determining the density ρ, the static conductance σ_{st}, the resistance R at room and nitrogen temperatures, the residual resistance R_{ost}, and the transition temperature T_s into the superconducting state. The values of basic characteristics of conduction electrons of the tested alloys (electron concentration N, mean velocity v_f on the Fermi level, total area of Fermi level S_f, effective collision frequency ν, collision

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USSR

LEKSINA, I. YE., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 97-107

frequency of electrons with phonons ν_{ep} and with impurities ν_{ed}) were determined on the basis of experimental data. The possibility is shown of obtaining N, ν, v_F and others from n and μ with the aid of normal skin-effect formulas, taking into account the nature of the relationship between the electron characteristics and the optical properties of alloys. An analysis of the results shows that: 1) the values of N are close to those of pure niobium, and only in 25% atomic Nb are these values somewhat smaller; 2) the effective collision frequency of electrons ν in alloys is $\sim 10^{15} sec^{-1}$, while the collision frequency of electrons with phonons ν_{ep} in alloys is close to that of pure niobium. Thus, the large ν values are related to large ν_{ed} values, which in alloys are two order higher than ν_{ed} of pure niobium; and 3) an anomalous dispersion $\varepsilon(\omega)$ was observed in the long-wave region in all alloys. This indicates the existence of interphase transitions with the resonance frequency in the range of $h\omega = 0.15 - 0.20$ ev for 25-70 at% Nb alloy and in the range of $h\omega < 0.15$ ev for 85 at% Nb alloy. The possibility of the correct determination of electron characteristics of Nb-Ti alloys from measurements of their optical constants is pointed out. The dependence of the transition temperature Ts on N and ν_{ep} is presented in graphs. Orig. art. has: 7 figures, 10 formulas, and 3 tables.
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USSR

UDC 669.293.6.018.5.537.312.62

BARANOV, I. A., KONOVALOV, N. T., KUNAKOV, Ya. N., KAMSKIY, L. Z.

"Development of Superconducting Material of Nb_3Sn for Solenoids"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 120-123. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I778 by the authors).

Translation: A superconductor of Nb_3Sn is developed and manufactured in the form of microcable with Cu coating and heat-resistant enamel. A technology of tinning is developed; the quantity of Sn precipitated on the cable can be adjusted up to 30%. Measurements of the critical temperature and critical current in specimens of multiple-core cable heat-treated at 960±10°C are performed. 1 fig; 1 table; 10 biblio refs.

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USSR UDC: 537.312.62

BARANOV, I. A., KONOVALOV, N. T., KUNAKOV, Ya. N., KAMSKIY, L. Z.

"Development of Nb_3Sn Superconducting Material for Solenoids"

V sb. Probl. sverkhprovodyashch. materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 120-123 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D547)

Translation: It is known that three intermediate compounds -- Nb_3Sn, Nb_6Sn_5 and $NbSn_2$ -- are formed in Nb-Sn diffusion layers, and the regions and temperatures of phase existence have also been determined. These data were used in developing the technology of Nb_3Sn superconducting wire. Nb_3Sn superconductor was developed and produced in the form of microcable with copper coating and heat-resistant enamel. The tinning technique is worked out; the amount of tin deposited on the cable may be regulated up to 30 percent by weight. The critical temperature and critical current are measured in multiplier cable heat-treated at 960±10°C. One illustration, one table, bibliography of ten titles.

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USSR UDC: 537.312.62

BARANOV, I. A., KAPLUN, Z. F.

"Superconducting Resonators"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 4, pp 14-34 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D470)

Translation: The paper deals briefly with the physical results of research on the peculiarities of interaction of microwave signals in superconductors. The most important characteristics of known superconducting materials suitable for making microwave cavity resonators are presented. Methods of making superconducting resonators are considered as well as their parameters and areas of application. Resumé.

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USSR

UDC 534.647:628.822

BARANOV, I. A., and RADYUKHIN, A. A.

"Device for Measuring the Axial Vibration of Small Radial-Thrust Ball Bearings"

Vibratsion. tekhnika No 2 -- V sb (Vibration Engineering. No 2 -- Collection of Works), Moscow, 1970, pp 142-147 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 71, Abstract No 2.32.655)

Translation: This article contains a description of a specially developed device for measuring the axial vibration of ball bearings. The characteristic features of the device include the following: the presence of two self-adjusting mountings which permits elimination of the effect of misalignments of the ball bearing rings on the magnitude of the vibration and low noise level -- no more than 1-5%. There are 3 illustrations.

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1/2 041 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--OPTICAL PROPERTIES OF SUPERCONDUCTING NIOBIUM AND TITANIUM ALLOYS -U-

AUTHOR-(05)-LEKSINA, I.YE., MOTULEVICH, G.P., SHUBIN, A.A., BARANOV, I.A., SYTNIKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 97-107

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SUPERCONDUCTING ALLOY, NIOBIUM ALLOY, TITANIUM ALLOY, PHOTON, OPTIC CONSTANT, LIQUID NITROGEN, SUPERCONDUCTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0189 STEP NO--UR/0126/70/029/001/0097/0107

CIPC ACCESSION NO--AP0054985

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310005-8"

2/2 041 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054985

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTICAL CONSTS. N AND X WERE MEASURE AT 1-10 MU FOR NB-TI ALLOY BETA-SOLNS., CONTG. 25, 40, 52, 70, AND 85 AT. PERCENT NB. STATIC COND., RESISTANCE AT ROOM AND LIQ. N TEMP., RESIDUAL RESISTANCE CRIT. TEMP. (T SUBC) FOR TRANSITION TO THE SUPERCONDUCTING STATE, AND D. WERE DETD. ALSO FOR THESE SOLNS. THE DATA WERE USED TO CALC. BASIC CHARACTERISTICS OF COND. ELECTRONS OF THE ALLOYS. THE STUDY REVEALS THAT, IN NB, S AND D SHELL ELECTRONS INTERACT FORMING A UNIFORM COND. BAND. THIS IS MORE PRONOUNCED IN ALLOYS HAVING A HIGHER VALUE OF EFFECTIVE FREQUENCIES (V) OF ELECTRON COLLISIONS THAN THAT OF NB METAL. A CORRELATION BETWEEN N (CONC. OF COND. ELECTRONS.) AND T SUBC AND V OF ELECTRON COLLISION WITH PHOTONS IS GIVEN.

UNCLASSIFIED

USSR

UDC 531.781.2

BARANOV, I. A., KOTEL'NIKOV, V. YE., GORSHKOV, V. A., and KAPTUR, G. YE.,
Moscow Aviation Technological Institute

"A Method for Determination of Ball-Bearing Clearance"

USSR Author's Certificate No 366367, Filed 6 Jul 70, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,
Mar(a) 73, claim No 1460181/25-28)

Translation: A method for the determination of ballbearing clearance in the setting in the shaft and in the housing, including a determination of axial rigidity of the bearing by the frequency of resonant vibration, distinguished by the fact that in order to increase the accuracy, ball-bearing axial rigidity after the setting of an internal ring and after the setting of an external ring, the value to the clearance is determined by the difference in the values of the rigidity.

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UDC: 537.312.62

USSR

EHMAN, V. K., KRAINSKIY, I. S., BARANOV, I. A., KONOVALOV, N. T.

Production and Investigation of Tape with Nb_3Sn Coating"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 60-63 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D548 [résumé])

Translation: An installation is developed for continuous heat treatment of niobium tape in a tin bath. On this installation a study was made of the influence of temperature and rate of the process on the critical parameters of the tape. It is concluded that it is advisable to use additional heat treatment of tape having a coating of $Nb_3Sn + Sn$. Two illustrations, bibliography of four titles.

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USSR UDC: 537.312.62

BARANOV, I. A., BYCHKOV, Yu. F. KORZHOV, V. P., MAL'TSEV, V. A., SLAVGORODSKIY, M. P., SHMULEVICH, R. S.

"Effect of Rhodium on the Superconductive Properties of Zirconium and Some of its Alloys"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 140-147 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D566 [résumé])

Translation: An investigation was made of the effect which dispersed segregations of a phase having a higher critical temperature than the matrix have on the critical current. Additions of rhodium increase the T_c of zirconium to 6-7 K with formation of solid-solution bcc, and up to 11-12 K with formation of Zr_2Rh. Critical currents were measured on ternary alloys Zr-Nb-Rh and Zr-Mo-Rh. After annealing at 450°C, when only α-phase was segregated, there was a considerable increase in the critical current. After annealing at 550°C, when the larger segregations of α-phase were accompanied by segregations of compound Zr_2Rh which has a high T_c, the critical current was appreciably lower. The results show a higher positive

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USSR

BARANOV, I. A. et al., Sverkhprovodyashchiye splavy i soyedin., "Nauka", 1972, pp 140-147

effect on the critical current of dispersed segregations which are non-superconductive at 4.2 K in a superconductive deformed matrix. Five illustrations, one table, bibliography of four titles.

2/2

USSR UDC: 620.178.162.4

BARANOV, I. A., Moscow Institute of Aviation Technology

"A Method of Determining the Damping (Attenuation) Factor of Rapidly Rotating Bearings"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, Dec 72, Author's Certificate No 360578, filed 15 Mar 71, published 28 Nov 72, p 109

Translation: This Author's Certificate introduces a method of determining the damping (attenuation) factor of rapidly turning bearings mounted on a rotor. The rotor is run up to working speed and forced oscillations are induced. These oscillations are registed by means of a vibration transducer and oscillographic device, and the damping factor is determined from the results of measurements by using a computational formula. As a distinguishing feature of the patent, measurement accuracy is improved by premeasuring the rigidity of the bearings under working load conditions, and determining the frequency of the normal mode of the rotor with bearings, and by filtering the signal taken off from the vibration transducer through a narrow-band filter tuned to the natural frequency of the rotor before sending it to the oscillograph.

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Gyroscopic

USSR UDC: 621.822.7

BARANOV, I. A., KAPTUR, G. Ye., Moscow Institute of Aviation Technology

"Effect Which the Variable Axial Rigidity of Ball Bearings Has on the Supports of a Gyromotor"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 15, No 3, 1972, pp 79-83

Abstract: Gyromotors are currently assembled with axial preloading to ensure a stable position of the center of mass. Increasing the axial load improves the stability of the center of gravity, but appreciably reduces the service life of the gyromotor. This paper deals with the effect which variable axial rigidity of ball bearings has on variation in axial preloading. The variation in axial rigidity of real ball bearings is due to irregularities in the races and balls, differences in the sizes of the balls and so forth. These defects cause periodic changes in axial rigidity even under a constant axial load. Formulas are derived which show the relation between the periods of rotation of the bearing components, the axial rigidity of the bearing, and the periodic change in the axial load on the gyromotor supports. This variable loading is apparently one of the reasons for the reduced service life of the gyromotor. Two figures, bibliography of three titles.

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UDC 531.383

USSR

BARANOV, I. A., KAN, S. G., SEVODIN, YE. P., YAKOVLEV, I. V., Moscow Aviation Engineering Institute

"Vibration of Gyromotors With Spherical Air Bearings"

Leningrad, Izvestiya vysshikh uchebnykh zavedeniy - Priborostroyeniye, No. 11, 1971, pp 86-88

Abstract: Comparative studies of the vibration parameters of gyromotors with air and ball bearings are reported. The studies were conducted on synchronous gyromotors with a kinetic moment of 500 g cm sec at a rotation rate of the rotor of 24,000 rev/min. The mean square value of the amplitude A_Σ of the axial and radial vibration acceleration was measured experimentally and the amplitude spectrum of the axial and radial vibration acceleration was recorded. A_Σ was measured in the three regimes of acceleration, working revolutions and coasting while the amplitude spectrum was taken only at working revolutions. The results showed that the vibrograms of the gyromotors with air bearings were considerably different from the vibrograms of gyromotors with ball bearings both qualitatively and quantitatively. Gyromotors with ball bearings showed a characteristic

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USSR

smooth increase in the amplitude of A_Σ in the acceleration process and a decrease at the time of coasting with a small number of resonance peaks. At working revolutions, the amplitude A_Σ was not constant and varied over time. The amplitude A_Σ of gyromotors with air bearings rose sharply at startup as a result of dry friction in the bearings. After the formation of a supporting gas film in the bearing, A_Σ dropped sharply and then rises smoothly until the rotor goes into working revolutions. A similar picture, but in the reverse order, occurs at coasting. Both under acceleration and in coasting there are no clearly expressed resonance peaks, thus indicating the good damping properties of air bearings. The amplitude A_Σ of gyromotors with air bearings at working revolutions is 50-100 times less than the amplitude of A_Σ of gyromotors with ball bearings. The amplitudes of the components of the vibration spectrum are less by an order of magnitude.

1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THE EFFECT OF COLD TREATMENT ON THE AXIAL RIGIDITY OF RADIAL THRUST BALL BEARINGS -U-

AUTHOR-(03)-BARANOV, I.A., GOLOSOV, L.V., MELGUNOV, N.P.

B

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT A CHANGE TAKES PLACE IN THE AXIAL RIGIDITY OF RADIAL THRUST BALL BEARINGS AS THE RESULT OF COLD TREATMENT. FACILITY: MOSCOW AVIATION TECHNOLOGICAL INSTITUTE.

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BARANOV, I.A.

Uspekhi

JPRS 56237
12 June 1972

UDC 621.822.7

EFFECT OF VARIABLE AXIAL RIGIDITY OF BALL BEARINGS ON VARIATION OF AXIAL LOAD ON GYROMOTOR BEARINGS

[Article by L. A. Baranov, G. Ye. Kaptur, Moscow Aviation Technology Institute; Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Russian, Vol 15, No 3, 1972, signed to press 25 February 1971, pp 79-83]

It is shown that the variable axial rigidity of ball bearings, caused by defects in the rings and balls, causes the axial load on the gyromotor bearings to change.

Modern gyrostors are assembled with preliminary axial load on the bearings for the purpose of ensuring stable motion of the center of mass [1]. An increase in the axial load increases the stability of the position of the center of mass, but this substantially decreases gyromotor service life.

We will examine the influence of variable axial rigidity of ball bearings on change in the preliminary axial load. A real ball bearing has various defects: irregularities of the rings and balls, variations in ball dimension, etc. These defects, during rotation of the ball bearing, should cause periodic change in its axial rigidity, even under constant axial load. The period of change of rigidity obviously is equal to the least common multiple of three periods: period of rotation of the bearing ring (of rotor) relative to the fixed ring. Assuming that the elastic relative axial displacement τ_{bb} of the rings of a perfect bearing and the axial load are related by the relation [2]

$$[\omega=bb] \qquad P=C\tau_{bb}^{\frac{3}{2}}, \qquad (1)$$

where C is a constant for each bearing, the axial rigidity of the bearing K_{bb} can be represented in the form

$$K_{bb}=\frac{dP}{d\tau_{bb}}=\frac{3}{2}C^{\frac{2}{3}}P^{\frac{1}{3}}. \qquad (2)$$

USSR

UDC 621.396.967:551.501.81

BARANOV, I. M., DYMOVICH, N. D., SOKOLOV, P. M.

"Errors in Measuring the Intensity and Size of Meteorological Objects as a Result of the Finite Width of the Radiation Pattern of the Radar Antenna"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 22-25 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G41)

Translation: A study is made of the effect of the space factor (the ratio of the volume filled by meteorological particles to the entire simultaneously reflecting object) on the magnitude and shape of the echo when rocking the beam with respect to the cross section of the cloud in the azimuthal direction. It is demonstrated that in order to decrease the errors caused by the finite width of the radiation pattern it is necessary to use a narrow beam antenna. There are 2 illustrations and a 3-entry bibliography.

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USSR

UDC 621.396.967:551.501.81

SOKOLOV, P. M., BARANOV, I. M.

"Effect of the Duration of the Main Bang of a Radar on the Magnitude and Shape of the Echoes from Meteorological Objects"

Sb. nauch. tr. Kiev, in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 25-28 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G4.0)

Translation: The effect of the finite pulse duration on the magnitude of the error during radar measurements of the parameters of meteorological subjects is analyzed. It is demonstrated that the error is small if the horizontal dimensions of the subject are appreciably greater than the spatial extent of the main bang, but they can reach a significant magnitude if the extent of the pulse is comparable to the extent of the object. There are 4 illustrations and a 2-entry bibliography.

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Radar

USSR B

UDC 621.396.963

BARANOV, I. M., DYMOVICH, N. D., SKVORTSOV, S. M., SOKOLOV, P. M., MOROZ, V. G., FOGORELOV, B. P.

"Radar Display for Determining the Parameters of Atmospheric Inhomogeneities"

USSR Author's Certificate No 253178, Filed 11 Dec 67, Published 24 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G51P)

Translation: A radar display containing a video amplifier and a plan position indicator has been patented for determining the parameters of atmospheric inhomogeneities. In order to represent the radar image of atmospheric inhomogeneities in the form of a series of concentric black and white rings, a coding tube is included between the video amplifier and the plan position indicator via a pulse amplifier. This coding tube converts the video signals from the atmospheric inhomogeneities into a train of pulses equal with respect to magnitude and different with respect to width and duty factor depending on the distribution of the instantaneous values of the video signal voltage. The joint effect of radial-circular scanning of the plan position indicator and rectangular pulse voltage create concentric black and white circles on the screen. The width of each circle corresponds to a defined interval of atmospheric inhomogeneity intensity. This facilitates determination of the inner structure of the inhomogeneity at the given point in time, and it permits

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BARANOV, I. M., et al., USSR Author's Certificate No 253178, Filed 11 Dec 67, Published 24 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G51P)

information about the intensity of precipitation with respect to area to be obtained and zones safe for aircraft flights to be determined. There are two illustrations.

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241222 HYDRAULIC PRESS comprises frame 1, columns 2, slide 3, head 4, fixed traverse 5 with tiebars 6, ejector rams 7 and its supporting movable traverse 8. The latter is attached to tail end 9 sliding in guides 10 of the fixed traverse, so that it can take up eccentric loads resulting in tension of the tiebars. The traverse carries out its operating stroke when fluid is fed into cylinders 11, whereas cylinders 12 ensure the return stroke. The frame holds table 13 with nests for inserts 14, the removal of which causes eccentric loading of traverse 8, and the rams 7 may then be used as eccentric pressing units.

18.8.67. as 1182432/25-27, SHCHUKIN, V.V., KERZHKOVSKII, E.I. and S.G. KHIRDZHIEV et al. (9.9.69) Bul. 13/1.4.69. Class 58a, Int. Cl. B 30b

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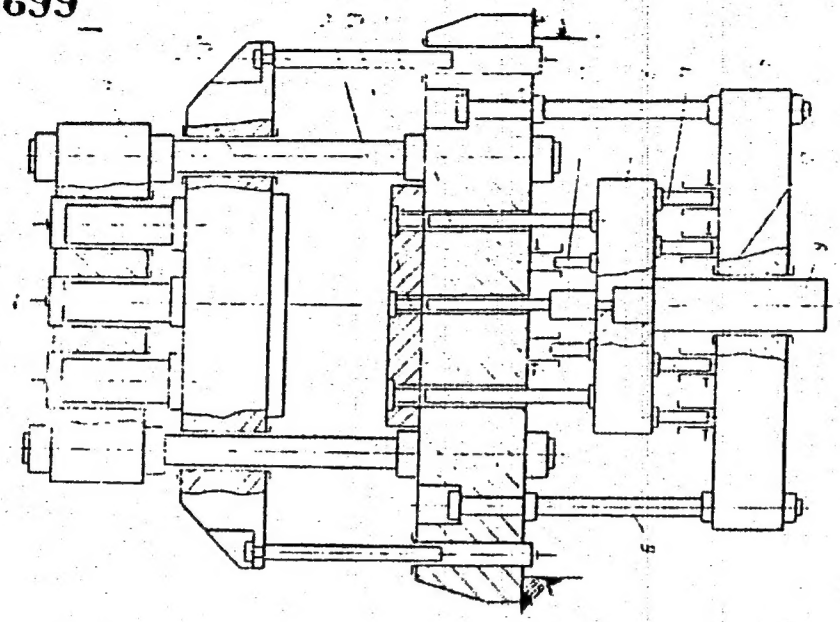

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